

TR NEWS

July–August 2019

NUMBER 322

Toward Railroad Trespassing Solutions

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

TRB

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* Membership as of May 2019.

3 Toward Railroad Trespassing Solutions

Robert L. Sumwalt

The July–August issue of *TR News* examines the data behind railroad trespassing fatalities, as well as countermeasures and research to reduce the rates of these deaths. The limitations of current interventions, from design solutions to procedures and rules, demonstrate the trespassing challenge: systemwide, the most beneficial interventions are seen as hard to implement on a large scale. But dogged research efforts and technological innovations open new opportunities for trespassing prevention, helping the railroad industry implement the most effective safety solutions.

8 Scope and Trend of U.S. Rail Trespassing and Suicide Fatalities

Kurt Topel

For the past 50 years, freight and passenger rail in the United States has been very safe for employees and passengers, and deaths of motorists at highway–rail crossings have decreased considerably since the mid-1970s. This same reduction in fatalities has not been realized for rail trespassing and suicide, however; these rates have remained constant. The author frames the challenge of trespassing on America’s railroads, examining similarities and differences between accidental trespassing and suicide, research gaps, and why policy makers must devote more attention to this urgent problem.

11 FRA’s Total Fatalities Figures Do Not Count All Deaths

Kurt Topel

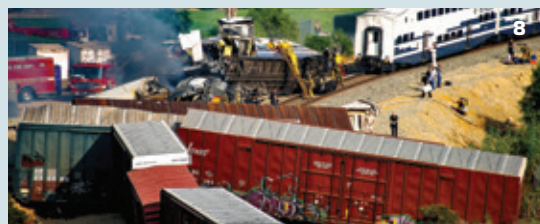
16 Development, Implementation, and Evaluation of a Community-Based Trespass Prevention Model

Marco P. daSilva, Michail Grizkewitsch, and Francesco Bedini Jacobini

Most trespassing casualties can be avoided. The Federal Railroad Administration (FRA) and its safety partners conducted studies to better target and implement outreach, public education, and law enforcement efforts. The results, along with national workshops, led to the *Community Trespass Prevention Guide*, which documents a collaborative, step-by-step problem-solving approach for local communities, as well as the Community, Analysis, Response, and Evaluation—or CARE—model. In this article, the research and process that led to CARE are outlined, along with real-world demonstrations of the model.

18 Railroad Fatalities in the United States: 2012–2017

Steve Laffey



23 Rail Trespassing and Suicide: What Can Be Done to Improve Safety?

Grigore M. Havârneanu and Kurt Topel

The authors identify established, effective countermeasures for preventing and mitigating rail trespassing and suicide, along with examples of the types of countermeasures as well as the research supporting them. Based on the RESTRAIL (REduction of Suicides and Trespasses on RAILway Property) research project in Europe, this article offers information on what can be done to prevent injury and death from rail trespassing and suicide.

30 Artificial Intelligence–Aided Automated Detection of Railroad Trespassing

Asim F. Zaman, Baozhang Ren, and Xiang Liu

Large volumes of surveillance video data deployed in the railroad industry open many possibilities for detecting and preventing unsafe trespassing on railroad tracks. Monitoring these data is highly time- and resource-consuming, however. In this article, authors describe an artificial intelligence (AI) framework that automatically detects trespassing events in real time. The data from studies of the AI system can help researchers understand human factors in railroad safety and can offer a real-time edge in tackling the critical challenges of railroad trespassing.



COVER Examined in this issue of *TR News* is the challenge of railroad trespassing, from the scope of the problem to countermeasures and research to prevent injuries and deaths. (Photo: Pixabay)

Coming Next Issue

In the September–October 2019 issue of *TR News*, authors examine the many facets of the transportation workforce: transportation agencies and their labor force, from consultants to operators to contractors; demographic, technological, and socioeconomic changes; research for roadmaps and mission plans; and practical strategies and tactics to address challenges.

A poster advertising careers with the Washington Metropolitan Area Transit Authority. The transportation workforce is the topic of the September–October issue of TR News.



Photo: Elvert Barnes

36 Safety Education and Community Outreach Initiatives for Trespasser Prevention: Metro-North and Long Island Rail Road

Justin Vonashek, Deidre Mitchell, Lori Ebbighausen, Karl Meyer, and Linda Katz

Through the Together Railroads and Communities Keeping Safe program, Metro-North Railroad and Long Island Rail Road in New York work with MTA Police Department to promote safe behaviors at or around railroad grade crossings and tracks. Since the program was implemented, fatalities on Long Island Rail Road have decreased by 50% and trespasser strikes on Metro-North have decreased by 33%. Community outreach efforts and safety education, at the core of TRACKS, are explored in this article.

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Anne Goodchild, University of Washington, and Lisa Staes, University of South Florida Center for Urban Transportation Research

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TR NEWS

features articles on innovative and timely research and development activities in all modes of transportation. Brief news items of interest to the transportation community are also included, along with profiles of transportation professionals, meeting announcements, summaries of new publications, and news of Transportation Research Board activities.

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